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#### ABSTRAC'I'

An adult educator in Butler, Pennsylvania, noticed that, although students who took the General Aptitude Test Battery (GATB) seemed highly motivated to improve their basic skills in mathematics and spatial relations, only 2 of her 20 students who took the GATB made a concerted effort to develop their vocabulary. Thinking that those two students were a peer vocabulary-building team because they were brothers, the instructor undertook an action research project to increase students' vocabulary skills by using a peer vocabulary-building team system. During the 4-month study, the instructor had students spend 15 30-minute study sessions with a peer vocabulary team. Data were collected in three ways: field observations, interviews with team members, and pre- and posttests to measure vocabulary gains. Of the 16 students enrolled in the instructor's GATB preparation class, 12 participated in the peer vocabulary-building team system. After 4 months, all 12 students demonstrated word recognition gains ranging from 23% to 583%. (Attachments constituting approximately 60% of this document contain a chart detailing the 9 aptitudes measured by 12 tests in the GATB and a student vocabulary progress record.) (MN)





A Learning From Practice Project

# **Action Research** Monograph

PENNSYLVANIA ACTION RESEARCH NETWORK 1998-99

Monograph Title:

Peer Vocabulary Building Teams

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For further project detail contact: The Pennsylvania Action Research Network

A Section 353 Project of the Pennsylvania Department of Education, Bureau of Adult Basic and Literacy Education

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## PRODUCT

"Pennsylvania Action Research Network: Staff Development Through Six Professional Development Centers"

> Project Number 099-99-9010 July 1998-June 1999

Project Director
Dr. Gary Kuhne
Assistant Professor and Regional Director of Adult Education
The Pennsylvania State University



#### Pennsylvania Action Research Monograph

Note: Action Research is a process of systematic inquiry credited to Kurt Lewin who popularized it in the U.S. in the 1940"s. Today it is considered a system of qualitative research. Typical of action research, none of the individual projects in this monograph series claims to have generalizable application beyond the specific project described. However, each monograph report can serve to be illustrative, instructive and provides the potential for replication in other locations. For a level of generalizability, it is recommended that the reader seek common patterns in the monograph reports in this series, and the wider literature, or contact the Action Research Network for assistance in this.



#### I. ABSTRACT

While students taking the General Aptitude Test Battery (GATB) are highly motivated to improve basic skills in mathematics and spatial relations, they shy away from developing vocabulary skills. This study is an effort to increase vocabulary skills by using a peer vocabulary building team system. Every student participating in this system increased word recognition from between twenty-three to five hundred eighty three percent.

#### II. PROBLEM

I work part-time as an ABE/GED instructor for Midwestern IU IV at Saint Andrew's Presbyterian Church on McKean Street in Butler. Class meets on Monday, Tuesday and Thursday evenings from 6:00 p.m. to 9:00 p.m. and operates from mid September to the end of May. The setting is rural.

Two of the county's largest industrial employers are the Armco Steel Corporation and the Penreco Oil Refinery. Both of these companies use Job Family 4 of the General Aptitude Test Battery (GATB) as one of the major criteria for interviewing and hiring new staff and have designated the Butler Job Center to serve as their GATB testing site. Test dates for the GATB test are scheduled several times each year. If a prospective employee does not earn a high enough score in Job Family 4 of the test to warrant an interview with these companies, he/she is given an opportunity to take one retest.

The Job Service refers most of the students who attend my class. They already have their high school diploma and, in many cases, have completed some kind of post high school training program. They come to class for the specific purpose of improving their skills and getting a better score on the GATB.

While students are highly motivated to improve their basic skills in mathematics and spatial relations, they shy away from working to develop their vocabulary skills. Since the ability to identify synonyms and antonyms is part of the score for Job Family 4, their test results would improve if they would devote some study time increasing their vocabulary.

In case the reader is unfamiliar with the GATB, a short overview of the test follows: The GATB measures nine aptitudes using twelve 6-minute tests. Seventy three percent of the score for Job Family 4 includes the scores from the verbal, numerical (arithmetic reason & computation),



and spatial aptitudes. The remaining 27% of the score in Job Family 4 include mark making, manual dexterity (placing and turning), and finger dexterity (assemble and disassemble). I have included a chart that names the twelve aptitudes and a breakdown of the aptitudes included in each of the five Job Families as Attachment A.

The people who want to work for Armco and Penreco probably have a higher aptitude for and are more interested in solving numerical, mechanical, and three dimensional problems because they went the to job center to secure a technical or manufacturing job. During our intake interview, most of these students share that they are not avid readers.

Students who study vocabulary might get a better score in Job Family 4 of the GATB and would increase their chances of receiving an interview for a job at Armco or Penreco.

I am always trying to improve my teaching methods. If I could find a way to encourage students who want to improve their GATB scores to study and improve their vocabulary, I would become a better ABE teacher.

#### III. PLANNING

In addition to completing all of the basic intake forms for program accountability, I administer the math section of the TABE locator test followed by the appropriate math level of Form 7 of the complete battery of the TABE test. The information provided from the TABE Individual Diagnostic Style Form serves as a guide in each student's individual education plan, and I use a variety of study aids to develop math and spatial relations skills. One of the most useful and popular study tools is the GATB study curriculum, which was developed in 1991 by Marilyn Gentzler and Debra Hudson at the Centre County Vocational Technical School.

Rationale for what I plan to do: Approximately twenty students who have attended classes at Saint Andrew's took their GATB retest on October 16. Although each of these students knew that improving his vocabulary skills would, in turn, improve his score in Job Family 4, only two brothers made a concerted effort to increase their sight vocabulary. Following one of my suggestions, they made flash cards to quiz each other on word recognition. Their efforts paid off, and they both came back to class after the test to let me know how much easier the vocabulary section of the test was after they had studied together. If fact, the Job Center noticed such a drastic improvement that they called me to ask what these two students did to improve their vocabulary



scores.

These brothers had a built-in peer vocabulary building team. Since their scores improved so much after using flash cards, I thought, why not create peer vocabulary building teams in my class and see what happens?

I will begin the project when students return to class on January 4, 1998. I will stop collecting data on April 30.

#### Methods used to collect the data

Field notes, interviews with students who work in a vocabulary building team, and tests of learner performance (pre- and post-test of vocabulary gains).

#### Baseline

Before we start using peer vocabulary building teams, students will mark the number of words they know from the list of the 250 Most Commonly Used Words on Standardized Vocabulary Tests. Unfortunately, I don't remember where I found this list, but I have used it for years, and students have found it most helpful. (See Attachment B)

#### Criteria for success

After fifteen 30-minute study sessions with a peer vocabulary team, students will realize at least a 20% increase in the number of words they can identify in the list of the 250 Most Commonly Used Words on Standardized Vocabulary Tests.

#### Constraints

The Job Center cannot announce the date of the next GATB test until approximately three weeks before the test is actually scheduled. Since my class operates on an open enrollment basis, some students may not attend enough classes to participate in fifteen 30-minute study sessions. If this happens, I will still administer a post-test and note the number of study sessions they attended.

#### Approval

My supervisor Elaine Nagel has already given her approval to this project.



I will explain the rationale for using the peer vocabulary building team system and ask students to participate in the project. Students are regularly pre- and post-tested in other content areas, and they are generally receptive to any study aid we use in class. I'm confidant that most, if not all, students will respond favorably to participating is this research.

#### Colleagues to discuss and evaluate work

Elaine Nagel, my supervisor Dan LaPorte, the counselor for my class and Charlene Fleming, an instructor who works with me on Thursday evenings.

#### Problem statement

Will every student who attend ABE classes to study for the GATB test show at least a 20% increase in the number of words they can identify in the list of the 250 Most Commonly Used Words on Standardized Vocabulary Tests after fifteen 30-minute study sessions with a peer vocabulary team?

#### IV. ACTION/ RESULTS

Sixteen students registered in my class to study for the GATB test. Four students did not complete a vocabulary recognition post-test. Two of these students did not want to work on a vocabulary building team. I think that the reason why they declined to study with the group is that they were embarrassed that they didn't know many of the words. Both of these students took a copy of the definitions home with them, but I'm not certain if they studied the words. Another student completed the pre-test, but he didn't come to class regularly and did not study with a team. The last student who did not complete the post-test knew almost all of the words when he took the pre-test and decided to devote his class time to studying for the math sections of the GATB.



Following is a chart to show student achievement:

NAME	Vocabulary Team Sessions	Pre-Test Score	Post-Test Score	% of Increase	Study at Home?
Eric	5	116	143	23%	No
Shawn	9	58	111	91%	No
Brian	4	28	90	221%	Yes
Larry	3	91	173	90%	Yes
James	16	6	41	583%	No
Terry	1	230	DNF	N/A	N/A
Lenny	5	140	190	35%	Yes
Charles	none	DNF	DNF_	N/A	N/A
Rob	5	84	117	39%	No
Rhonda	10	75	121	61%	No
Jim	none	DNF	DNF	N/A	N/A
Randy	14	41	217	429%	Yes
Kris	8	44	121	175%	Yes
Ron	5	33	73	121%	No
Jay	2	70	DNF	N/A	N/A
Lisa	10	85	159	87%	Yes

Every student who participated in the Vocabulary Building Teams increased his word recognition skills by twenty-three to five hundred eighty three percent. In addition, students laughed more. They came to class more often and became cheerleaders for their team members. Many students who studied their words at home got their families involved in their learning. They were proud of themselves for their accomplishments. They felt more confident about taking the GATB test.

#### V. REFLECTION

This project illustrates the theory of Occum's Razor that states the simplest solution is usually the best. Although students did not have enough time to participate in fifteen sessions with their peer vocabulary team, they all learned new words, and they had fun in the process.

However, I would do one thing differently. Just because students learned the meanings of new words does not guarantee that their GATB test scores would improve. The verbal section of the GATB test measures, not only a person's ability to recognize the definitions of words, but also his ability to identify pairs of synonyms and antonyms.



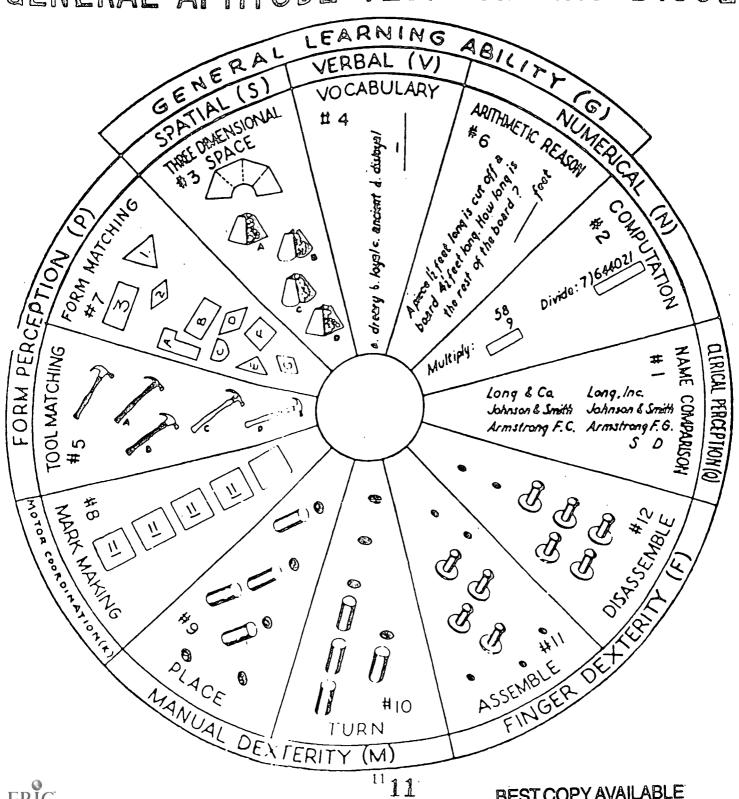
Since I am confident that students will work in teams, I have asked my supervisor, Elaine Nagel, to purchase some vocabulary building study aides for next year that focus on synonym and antonym identification. I can see two benefits from using these books next year. First, students will be able to learn words and practice using them as they will appear on their GATB test. Second, those students who shied away from working on a peer vocabulary team might be more inclined to participate if they also had a workbook to use.

All of the students came together to make this project successful. Next year, I hope that I will be able to document the same student achievement when I add vocabulary workbooks to the recipe of peer vocabulary teams.



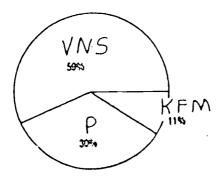
ATTACHMENT A

# NINE APTITUDES MEASURED TWELVE TESTS GENERAL APTITUDE TEST BATTERY B:1002

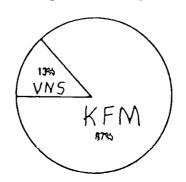


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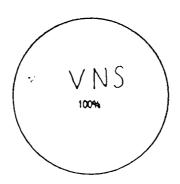
JOB FAMILY 1 Set-up Jobs



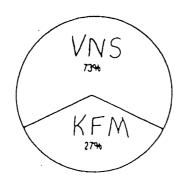
JOB FAMILY 2 Feeding-Offbearing Jobs



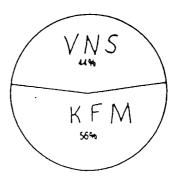
JOB FAMILY 3
Professional & Supervisory Jobs



JOB FAMILY 4
Skilled Trades & Clerical Jobs



JOB FAMILY 5 Semi-Skilled Jobs





# ATTACHMENT B

Name			oblivious
Date	Date		indifferent
		<del></del> -	obscure
	ostentatious	<u> </u>	objective
	contentious		revere
	reprove		discriminate
	pessimism		embellish
	cursory		denounce
	profligate		innovate
	miser		stagnant
	jocular		candid
	fracas		impartial
	caricature	· -	discern
	corroborate		vulnerable
	precarious		hypocritical
	expository		eccentric
	bolster		disdain
	daunt		abstract
	apathy	·	valid
	ambiguous		subtle
	fervent		enigma
	vagrant		inevitable
	undermine		inferred



 diverse		prodigal
 articulate		assess
 apprehensive		deter
 benevolent		complacent
 virulent		contempt
 pious		eloquent
 skeptical		virtue
 provincial		vital
 resignation		guile
 illuminate		biased
 resolution		censor
 servile	<del></del>	monotonous
 diligent		trivial
 refute		profound
 anarchy		enhance
 miser		phenomenon
 discord		enduring
 inclined		advocate
 perceptive		solitude
 superficial		tentative
 lucid		contemporary
 immune		provocative
 aesthetic		adversary



	grave		elusive
	banal		facilitate
·	depravity		static
<del></del>	temper	<del></del> - <u>-</u> -	ironic
	censure		irrational
	extol		dogmatic
	indulgent		flagrant
	erratic		frivolous
	insipid		taciturn
<del></del>	euphony		infamous
	antagonism		redundant
	arbitrary		authoritarian
	austere	<u> </u>	exhaustive
	expedite		reticent
	heresy	<del></del>	fervor
	compromise		scanty
	condescend	<del></del>	dispassionate
<del></del>	fallacious	<del></del> -	pragmatic
	intangible		didactic
	arrogant		deference
	compatible		alleviate
	dubious		vacillate
	solicit	<del></del>	endorse



 conspicuous	 relevant
 negligence	 incoherent
 ephemeral	 mitigate
 relegate	 reprehensible
 futile	 augment
 condone	 engender
 tranquility	 deride
 dissent	 acclaim
 conciliate	 lethargic
 incessant	 fanatic
 disparity	 novel
 disparage	 solemn
 conventional	 ambivalent
 rigor	 indolence
 profuse	 benign
 expedient	 tedious
 fastidious	 amiable
 prosaic	 laud
 philanthropy	 caustic
 languid	 atrophy
 astute	 meander
 authentic	 instigate
 brevity	heed



	virtuoso	· <del></del>	orthodox
	predecessor		innate
<del></del>	deplete		preclude
	compliant		efface
	inadvertent		marred
	acquiesce		ameliorate
	levity		prodigious
	belittle		concise
	extraneous		immutable
	digress	· ————————————————————————————————————	stoic
	emulate		innocuous
	appease		credulous
	sage		blasphemy
	auspicious		lax
	universal		cryptic
	fickle	· · · · · · · · · · · · · · · · · · ·	hinder
	furtive		esoteric
	remorse		pretentious
	repress		incongruous
<del></del>	gullible		unprecedented
	respite		merger
	scrutinize		pedestrian
	coalesce		prudent



	 	_exemplary
	 	_sycophant
	 	_neutral
	 	_rescind
	 	_retract
		_fundamenta
	 	_rejuvenate
	 	_contrite
	 	_exemplify
_		_nullify
		_vilify
	 	_hypothetical
		_nostalgic
		_assuage
		_saccharine
_	 	_stanza
		jeopardy
	 	_supercilious
	 	_avarice
	 	_pivotal
		scrupulous





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